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| 19. ABSTRACT (Continue on reverse if necessary and identify by block number) The reaction path of the SOCl_2 reduction from electrolytes containing dissolved AlCl_3 , with and without the addition of LiCl , is examined by IR-reflectance spectroscopy and cyclic voltammetry. The IR-spectroscopic investigation provides information on the sequence the various SOCl_2 -bearing species are reduced. In particular, onium ions accept electrons at low overpotentials while the $\text{Li}(\text{OSCl}_2)_2^+$ species require an overpotential in excess of 1.0 V for the reduction to occur. The importance of the interplay between participating processes and the charge transfer is indicated by the scan rates and the shape of voltammograms as a function of concentration of the electroactive species. This interplay emphasizes the need for a better understanding of the role of the electrode/electrolyte interphase during cell/battery discharge. | | | |
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